IN THE CLAIMS

Please amend the claims to read as follows:

Listing of Claims

1. (Previously Presented)   A system for providing service in a wireless local area network comprising:

a single or plurality of wireless access points (WAP) for processing a subset of complete functionality defined for the wireless local area network;

a single or plurality of control nodes (CN) for providing a subset or complete functionalities defined for the wireless local area network; and

a negotiation unit for the single or plurality of WAPs to dynamically negotiate with the control node for a secure connection and function split arrangement;

whereby the control node negotiates with the single or plurality of WAPs using the negotiation unit and provides complementary functionality for the single or plurality of each of the WAPs to form a complete functionality defined for the wireless local area network according to a decision of the negotiation unit.

2. (Previously Presented)   The system according to claim 1, wherein said WAPs and CNs further comprise logically independent functional components of the functionalities defined for the wireless local area network with predefined interfaces used between each functional components.

2

3. (Previously Presented)   The system according to claim 2, wherein said predefined interfaces used between said functional components are used over remote connections between said WAPs and said CNs.

4. (Previously Presented) The system according to claim 1, wherein each of said CNs further comprises a control node controller module and each of said WAPs further comprises a wireless access point controller module.

5. (Previously Presented)   The system according to claim 4, wherein the controller module of said CN further comprises a single or plurality of processing schedules comprising sequential lists of descriptors for subsets of said functional components used for each wireless access point.

6. (Previously Presented)   The system according to claim 4, wherein the controller module of said WAP further comprises a single or plurality of processing schedules each comprising sequential lists of descriptors for subsets of said functional components used for each associated mobile terminal.

7. (Previously Presented) The system according to claim 1, wherein each of the WAPs further comprises:

a discovering unit for discovering an the available CN within a specified domain; and

a secure connection negotiating unit for negotiating a secure connection with a CN that may provide the complementary functionality desired by the WAP;

whereby the WAP locates the CN that provides the complementary functionality with regard to defined complete wireless local area network functions with the discovering unit and establishes a secure connection with the CN that provides the complementary functionality with the secure connection negotiating unit.

8. (Previously Presented) The system according to claim 1, wherein the controller module of said CN generates a data unit which resembles a data unit of a mobile terminal.

9. (Withdrawn) A system for providing service in a wireless local area network (WLAN) comprising:

a single or plurality of mobile terminals, each of said mobile terminals associated with and receiving services from a single or plurality of wireless access points (WAP);

a single or plurality of WAPs to process data units received from the single or plurality of mobile terminals or the single or plurality of WAPs using a subset of defined WLAN functions; and

an exchanging unit for the WAPs to exchange data units processed with a subset of WLAN functions;

wherein each of the WAPs further processes the processed data units received from other WAPs with complementary functionality among the subset of defined WLAN functions, and

whereby a data unit for a mobile terminal is processed with complete WLAN functions by a plurality of said WAPs.

10. (Withdrawn) The system according to claim 9, wherein each of the WAPs further comprises a control module for negotiating with other of said WAPs for a subset of the complete WLAN functions to be carried out at each of said WAPs.

11. (Withdrawn) The system according to claim 9, wherein each of the WAPs further comprises a local database that stores all associations of the mobile terminals attached to said WAP and a corresponding subset of the complete WLAN functions to be provided to the mobile terminals.

12. (Previously Presented) The system according to claim 1, wherein the functionalities of said WAP and CN are collocated in a single network element.

13. (Previously Presented) A method for providing service in a wireless local area network (WLAN) that allows a defined WLAN function split between a wireless access point (WAP) and a single or plurality of Control Nodes (CN) comprising the steps in which:

a the WAP discovers CNs that may provide complementary WLAN functions by sending a single or plurality of messages containing information about a subset of WLAN functions of the WAP to all of the CNs in the plurality of CNs;

after receiving said discover message, at least one of the CNs replies with a single or plurality of messages containing information about a subset of WLAN functions said CN has available for the WAP; and

said WAP chooses from all the replied CNs a proper CN based on local policy and establishes an association with said chosen CN.

14. (Previously Presented) The method according to claim 13, wherein the choosing of the proper CN by said WAP comprises choosing the proper CN using information, the information comprising:

  i. the subset of the WLAN functions offered by the CN;

  ii. a cost of using the CN;

  iii. a vendor of the CN;

  iv. characteristics of a connection to the CN; and

  v. a weighted sum of the above factors.

15. (Withdrawn) A method for providing service in a wireless local area network (WLAN) that allows a defined WLAN function split between wireless access point (WAP) and a single or plurality of Control Nodes (CN) comprising the steps in which:

  a CN dynamically discovers a capability of a WAP by sending a single or plurality of messages to the WAP, each of the messages containing a section that emulates a data unit sent by a mobile terminal;

  the WAP receives at least one of said messages, processes said section using a same procedure for processing data units received from the mobile terminal and sends another data unit back to said CN in a reply message; and

  said CN obtains capability information of said WAP by examining the processed data unit in said reply message.

16. (Withdrawn) A method for providing service in a wireless local area network (WLAN) that allows a defined WLAN function split between a wireless access point (WAP) and a single or plurality of Control Nodes (CN) comprising the steps in which:

a CN obtains a capability of the WAP; and

said CN negotiates with another CN or a plurality of other CNs for supplementary WLAN functions to be provided to the WAP.

17. (Withdrawn) A method for carrying out load balancing in a wireless local area network (WLAN) without requiring a mobile terminal to change an association relationship with a wireless access point (WAP) comprising the steps in which:

the WAP separates a processing function provided to the mobile terminal into an association specific part and a non-association specific part;

said WAP negotiates with another WAP regarding the non-association specific part and establishes a secure tunnel with said another WAP;

said WAP tunnels a data unit from a mobile terminal to the said another WAP through the tunnel after processing said data unit with functions of the association specific part; and

said another WAP receiving the processed data unit through said tunnel processes said data unit with functions of the non-association specific part.

18. (Withdrawn) The method according to claim 17 further comprising a step in which said WAP uses a wireless channel to establish a direct connection with said another WAP and sets up said secure tunnel over the direct connection.

19. (Withdrawn) The method according claim 17 further comprising a step in which the WAP decides on whether to tunnel said data unit from the mobile terminal to said another WAP for said non association specific processing by monitoring a load at said WAP and comparing it with a preset threshold value.

20. (Withdrawn) The method according to claim 17 further comprising a step in which said WAP decides on which other WAPs should be used for said non association specific processing by monitoring loads at said other WAPs said WAP has connections with and compares said loads with a preset threshold value.

21. (Withdrawn) The method according to claim 17 further comprising step in which a central control entity monitors a load status on all WAPs within a certain domain and mandates distribution of said non-association specific processing functions between different WAPs from among said all WAPs.

22. (Withdrawn) The method according to claim 17 for the WAP to determine a distribution of said non-association specific processing functions based on information, the information comprising:

a size of the data unit to be processed;

an expected average time for the processing of the data unit;

an overhead time for the processing of the data unit; and

a weighted sum of the above factors.

23. (Previously Presented) A method for providing service in a wireless local area network (WLAN) that allows a defined WLAN function split between a wireless access point (WAP) and a single or plurality of Control Nodes (CN) comprising the steps in which:

a subset of WAPs processes a total of its subset of functionality defined for the WLAN;

the WAP dynamically negotiates with a CN for a secure connection and function split arrangement; and

the CN provides complementary functionality for each of the WAPs to form a complete functionality defined for the wireless local area network according to a decision in the negotiation step.

24. (Cancelled)

25. (Previously Presented)   A method for accommodating variances in a wireless network topology comprising a step of dynamically adapting an operations logic of at least one network entity of said wireless network topology to alter processing of one or more functional sub-components.

26. (Previously Presented) The method according to claim 25 further comprising a step of altering processing of selected functional sub-components at the at least one network entity by bypassing said processing of said selected functional sub-components.

27. (Previously Presented) The method according to claim 25 further comprising a step of altering processing of selected functional sub-components at the at least one network entity by selectively processing said selected functional sub-components.

28-30. (Cancelled)

31. (Withdrawn) A method for determining a topology of a wireless network, wherein a first network entity alters a connectivity association with a second network entity by including one or more third network entities in a communication path of an alternate connectivity association, comprising the steps of:

exchanging information on neighbouring network entities among said network entities of said wireless network;

analyzing communication frames received by said network entities based on pre-established representations of said topology of said wireless network; and

analyzing association request frames received by said network entities based on said pre-established representations of said topology of said network.

32. (Previously Presented) A wireless access point (WAP) in a wireless local area network (WLAN) that allows a defined WLAN function to be split between the wireless access point (WAP) and one or more Control Nodes (CNs), the WAP comprising:

a discovery function which initiates a discovery operation to discover a Control Node (CN) among said one or more CNs that may complement said WAP with respect to providing said defined WLAN function by sending a plurality of discover messages containing information about its own subset of the defined WLAN function, to the one or more CNs;

a receiving function which receives one or more reply messages from said one or more CNs in response to said discover messages, said one or more reply messages including information about a subset of the defined WLAN function, said one or more CNs have available for the WAP;

a choosing function which chooses from among said one or more CNs that sent said one or more reply messages a particular CN based on local policy.

10

33. (New) A Control Node that allows a defined wireless local area network (WLAN) function to be split between a wireless access point (WAP) in the WLAN and the Control Node, the Control Node comprising:

a receiving function which receives a discover message including information about a subset of the defined WLAN function from the WAP;

a sending function which sends a reply message to the WAP in response to the discover message;

a negotiating function which dynamically negotiates with the WAP for a secure connection and function split arrangement; and

a providing function which provides the WAP with complementary functionality for the WAP to form a complete functionality defined for the WLAN according to a decision in the negotiating function.